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**THE GENERA CORYNITIS, GEMMARIA, AND
ZANCLEA**

CHAS. W. HARGITT



CAMBRIDGE, MASSACHUSETTS
1910

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THE GENERA CORYNITIS, GEMMARIA, AND ZANCLEA

CHAS. W. HARGITT

FOR some years the author of this communication has been aware of more or less confusion concerning the exact definition and characterization of the above-named genera. From material which has recently come into my possession, and upon a careful review of the literature, especially McCrady's original descriptions, I believe it is now quite possible to clear up, once for all, most of the existing ambiguity and uncertainty.

In a recent paper *Biol. Bull.*, 14, p. 100, 1907, figures and details are submitted which need not be here repeated. It is the purpose of this paper to merely call attention to the more important points, and summarize conclusions.

Corynitis. — This genus was instituted by McCrady for a hydroid and medusa described by him from Charleston Harbor (*Proc. Elliott Soc. Nat. Hist.*, 1, p. 131), and named in honor of Professor Agassiz *Corynitis agassizii*. Notwithstanding the fairly full description, especially of the medusa, a most remarkable confusion has crept into the literature in respect to the supposed relations of the species.

About the time that McCrady described his species Agassiz also described a new hydroid which he designated as *Halocharis spiralis*. (*Con. Nat. Hist.*, 4, p. 239.) For some unaccountable reason he subsequently came to regard this species as identical with McCrady's *Corynitis agassizii*, and on page 340 (*op. cit.*), gives priority to the latter name, ranking his *Halocharis* as a synonym. That this was not a mere oversight or clerical error is evident in that on page 344 he recognizes McCrady's *Zanclea gemmosa* as quite distinct from *Halocharis*, and this error is perpetuated by A. Agassiz in *N. Am. Ac.*, p. 183. These errors have continued throughout the literature up to the present time, though, as will be shown, it has later come to be known definitely that the medusa which McCrady described as *Zanclea gemmosa*, or rather *Gemmaria gemmosa*, is liberated from a hydroid resembling Agassiz's *Halocharis*, indeed almost certainly identical with it.

That Murbach, who first observed the liberation of this medusa, was correct in identifying it with McCrady's *Gemmaria gemmosa* I have abundantly satisfied myself by similar observations at various times since. But he is clearly in error in attempting to identify it with McCrady's *Corynitis*, due, no doubt, to the earlier error of

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Agassiz, as already pointed out. Murbach is also in error in attempting to distinguish a generic difference between Agassiz's *Halocharis* and the *Gemmaria* of European writers, as I have elsewhere pointed out (*Mitt. Zool. Sta. Neapel*, 16, pp. 574-577, 1904; *Medusæ of Woods Hole*, p. 41, 1904).

In the summer of 1904 the writer described an apparently new species of hydroid from Long Island Sound, namely, *Syncoryne linvillei* (*Biol. Bull.*, 7, p. 351, 1904). Not having access at the time to McCrady's monograph, and with the current confusion above referred to still more or less dominant, the details of McCrady's description of *Corynitis* were wholly overlooked. A more recent and critical examination of this has clearly convinced me that the hydroid in question is quite identical in its generic relations with *Corynitis*, and should be so ranked hereafter. Whether it is specifically the same as *C. agassizii* must remain more or less uncertain, at least till it may be possible to have specimens of the medusæ for comparison, these having been lacking in the material from which my description was drawn.

That there may be no doubt whatsoever as to the facts concerned, or of the confusion alluded to, it seems worth while to include a summary of McCrady's descriptions.

Concerning the *hydroid*, the description is rather inadequate and indefinite. "The larva is a coryne with a short, thick polyp and few tentacula. The medusa-buds borne in the usual position, and the peculiar character of the tentaculiferous bell-margin is conspicuous at an early age." Of the habitat of the hydroid he says, "The coryne which bears this medusa is rather rare, as is also the medusa. It is found growing on sponges a little above dead low water mark. It has been found during the summer months, and whether or not it exists during the winter (as in all probability it does), has not been ascertained. A young bitentaculate, but free medusa, has been found as early as the fifth of June. A fully developed specimen has occurred in the end of July, while as late as the twelfth of September buds were still produced from the coryne, figures 6, 7, and 8 having been drawn at this date. This leads me to say that I have not seen the actual separation of a bud from the hydroid, and its assumption of the form of figure 5. My confidence that they are one and the same is due to the very marked and almost unmistakable peculiarities of the medusa, which are fairly exhibited in the buds while attached to their hydra."

As will be seen, there is little here from which one might attempt to identify the hydroid. Aside from the fact that it is designated as a corynid, and that it has a short thick hydranth with few tentacles, the medusa-buds in the "usual position," no morphological features are given. The habitat and association with the sponge are interesting facts, but without taxonomic significance.

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Gemmaria and Zanclea. — Attention has been directed to the confusion of McCrady's Gemmaria with his very different genus Corynitis. A similar confusion has also been more or less current as to the relations of Gemmaria and Zanclea. The latter was instituted by Gegenbaur for a medusa found at Messina, and recognized by McCrady as having certain points of similarity to his doubtful Gemmaria, which he believed, however, to be quite generically distinct from Zanclea.

Having taken a medusa at Woods Hole during several years, which is now well known as identical with McCrady's Gemmaria, and having kept these meduse at various times and for considerable periods in the laboratory, I am convinced that they are generically different from Zanclea. Briefly diagnosed, Zanclea was described by Gegenbaur as having four short oral lobes, four marginal canals and the same number of marginal tentacles, the latter with numerous secondary appendages (Anhängen).

In at least two important aspects there are important differences in Gemmaria, namely, the mouth is not marked by any distinguishable lobes or lips; and second, there are only two marginal tentacles. These latter do not increase in number with age, so far as one may judge by having them long under observation. This is likewise true of *Gemmaria implexa*, taken by the writer at Naples, and described briefly in a paper in the *Naples Mittheilungen* (16, p. 574, 1904).

It would seem therefore that the genus Gemmaria of McCrady must be recognized as founded on thoroughly good characters, and that it is quite distinct from Zanclea of Gegenbaur. Hence we must also accept McCrady's *G. gemmosa* as a distinct species, and this name must entirely supplant that of *Corynitis agassizii*, as pointed out in the preceding section.

In a recent admirable paper, "Craspedote Medusen, Codoniden, und Cladonemiden," Hartlaub has discussed in some detail certain points as to Gemmaria and Zanclea. With most of Hartlaub's views the foregoing will be found to substantially agree. Concerning his contention as to the identity of the genera Zanclea and Gemmaria of Gegenbaur and McCrady I should have to dissent, at any rate till such time as there may be presented more convincing evidence than is at present available.

Incidentally it may be noted that, not only was McCrady strongly impressed with the generic distinctness of Gemmaria, but subsequent students of these genera, notably A. Agassiz and Haeckel, have unhesitatingly recognized the validity of McCrady's genus. Agassiz, who was familiar with *G. gemmosa*, has described an additional species, *G. cladophora*, and in a comparison of Gemmaria and Zanclea says, "The form of the bell, of the digestive cavity and of the tentacles are wholly different in the two genera" (*N. Am. Acal.*, p. 185).

Haeckel, after citing Gegenbaur's diagnosis of Zanclea, presents

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these further points: "To this diagnosis is to be added the following: that in the exumbrella occur four perradial nettle-rows, that the gonads form four simple perradial pouches in the wall of the stomach, and that the cavity just above the stomach is lacking, which distinguishes the nearly related *Pteronema*. The four perradial tentacles are so covered with stalked netting buds that they appear feathered."

He further adds: "Up to the present the genus *Zanclea* has been represented only by a Mediterranean species, *Z. costata* from Messina. Agassiz added to this two other species, *Z. ambigua* and *Z. gemmosa*. Of these, however, the first is to be placed under *Pteronema*, the latter under *Gemmaria*." (*Das Syst. der Medusen*, p. 102.)

Haeckel therefore recognized without hesitation the evident distinctness of the genus *Gemmaria*, and has himself described a new species under it, namely, *G. sagittata*.

In Hartlaub's revised definition of the genus *Zanclea* he has naturally modified and enlarged that of Gegenbaur in order to include under it medusæ hitherto described under the generic characters of *Gemmaria*.

To the present writer this seems likely to result in "confusion worse confounded." As a matter of fact there must remain more or less uncertainty as to the actual relations of Gegenbaur's genus till the ontogeny of the medusa is clearly established. On the basis of the original description it is unmistakably distinct from *Gemmaria*. The statement by Browne that the *G. implexa* of the Firth of Clyde may have two or four tentacles is an inference rather than a fact, the four tentacled specimens not having been traced directly to the hydroid from which they came. And until this is actually done, especially in the case of *Zanclea costata*, any attempt to reconstruct genera is premature and unwarranted.

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